

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

Listing of Claims:

Claim 1-27 (Cancelled).

Claim 28 (Currently Amended): An image forming apparatus configured to be connected to a plurality of hardware resources by a system bus, including:

an image conversion unit configured to process image data by software with a first conversion function to convert an image into a different format, and configured to access and to send the image data to a hardware image processing unit over the system bus that is configured to process the image data by hardware with at least one second hardware conversion function;

a resource management unit configured to determine a memory size required for one of the first conversion function or the at least one second hardware conversion function to convert the format of the image data; and

an image data management unit acquiring a memory area corresponding to the memory size of the resource management unit,

wherein the image conversion unit is further configured to access a register of the hardware image processing unit over the system bus to determine which ones of the at least one second hardware conversion functions are available for conversion of the image data, and

wherein when the image data management unit fails to acquire a memory area corresponding to a maximal memory size, the image data management unit attempts to acquire a memory area corresponding to a smaller memory size gradually reduced from the maximal memory size by gradually subtracting a memory size unnecessary to convert the format of the image data from the maximal memory size.

Claim 29 (Previously Presented): The image forming apparatus according to claim 28, wherein hardware image processing units with different types of at least one second hardware conversion functions can be connected to the system bus, and the image conversion unit is configured

to identify the different types of at least one second hardware conversion functions of the hardware image processing unit, and

to submit image data to the different types of at least one second hardware conversion functions of the hardware image processing unit for image processing.

Claim 30 (Previously Presented): The image forming apparatus according to claim 28, further comprising the hardware image processing unit connected to the system bus, wherein the hardware image processing unit includes:

a first hardware image processing unit configured to compress the image data;

a second hardware image processing unit configured to improve image quality of the image data; and

an availability determination register configured to be accessed by the system bus to indicate what second hardware conversion functions are available in the hardware image processing unit.

Claim 31 (Previously Presented): The image forming apparatus according to claim 29, wherein the resource management unit is configured to set a hardware management flag based on the identification of the different types of at least one second hardware conversion functions by the image conversion unit, and

the image data management unit is configured to acquire a memory area corresponding to an availability of the different types of at least one second hardware conversion functions, upon a request for image data conversion from an external device.

Claim 32 (Previously Presented): The image forming apparatus according to claim 31, wherein the image data management unit is further configured to reserve a target memory size, and as a function of the availability of the different types of the at least one second hardware conversion functions in the hardware image processing unit, is configured to modify a size of the target memory size by an algorithm in a step-wise fashion.

Claim 33 (Previously Presented): The image forming apparatus according to claim 32, wherein the image data management unit is further configured to increase the target memory size as a function of the hardware management flag, so as to provide more memory than the target memory size for an increased number of available second hardware conversion functions.

Claim 34 (Currently Amended): A method of acquiring a memory area for an image forming apparatus configured to be connected to a plurality of hardware resources by a system bus, at least one of the hardware resources being a hardware image processing unit having at least one second hardware conversion function configured to convert a format of image data, the method comprising:

accessing the hardware image processing unit over the system bus by an image data conversion unit to read a register of the hardware image processing unit, the register including information determining which ones of the at least one second hardware conversion functions are available for conversion of the image data;

determining a memory size required for the at least one second hardware conversion function to convert the format of the image data; and

acquiring a memory area corresponding to the memory size of said step of determining,

wherein when said acquiring fails to acquire a memory area corresponding to a maximal memory size, the acquiring further attempts to acquire a smaller memory area corresponding to a smaller memory size gradually reduced from the maximal memory size by gradually subtracting a memory size unnecessary to convert the format of the image data from the maximal memory size.

Claim 35 (Previously Presented): The method of acquiring a memory area for an image forming apparatus according to claim 34, further comprising:

setting a hardware management flag based on the identification of the different types of available at least one second hardware conversion functions;

requesting image data conversion from an external device; and

acquiring the memory area corresponding to a number of available different types of at least one second hardware conversion functions based on said hardware management flag.

Claim 36 (Previously Presented): The method of acquiring a memory area for an image forming apparatus according to claim 35, further comprising:

reserving a target memory size; and

modifying a size of the target memory size with an algorithm in a step-wise fashion based on said hardware management flag.

Claim 37 (Previously Presented): The method of acquiring a memory area for an image forming apparatus according to claim 36, wherein said modifying further comprising:

increasing the target memory size as a function of the hardware management flag, so as to provide more memory than the target memory size for an increased number of available second hardware conversion functions.